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LETTER TO THE EDITOR

Letter to the Editor concerning "An unexpected connection: a narrative review of the associations between gut microbiome and musculoskeletal pain" by Tonelli et al. (Eur Spine J; 2022: doi:10.1007/s00586-022–07429-y)

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We were intrigued by the article by Tonelli et al. [1], which discussed a narrative review of the unforeseen association between the gut microbiome and musculoskeletal pain. However, with recent advances in this area, we have some concerns about this paper.

First, since there has been a large amount of evidence to support that the gut microbiota is associated with many factors that modulate the fracture risk [2], the author should emphasize the link between the gut microbiota and metabolic bone diseases, such as osteoporosis, when describing musculoskeletal pain.

Second, some evidence has shown that the gut-joint axis exists in the etiology of osteoarthritis, which is one of the leading causes of musculoskeletal pain [3]. Regarding the gut-skin-spine microbiome axis, studies using comprehensive metagenomic analyses, such as next-generation sequencing or proteomic analyses of the lumbar intervertebral discs, have reported the presence of diverse bacteria in degenerated and deformed discs. Moreover, the homology between gut bacteria, skin, and disc bacteria has been reported [4].

Finally, additional information is required about the gut flora and the effects of exercise, food, and probiotics on musculoskeletal pain.

Describing these ideas that we mentioned above in the article would provide readers with a better understanding of the effect of the association between the gut microbiome and musculoskeletal pain. We believe that the collective microbiome knowledge demonstrated by the authors will lead to the development of microbiome-based therapies for the treatment of musculoskeletal diseases. We would appreciate your comments on these points so that we can further corroborate the results of this remarkable study.

Declarations

Conflict of interest The authors declare no conflicts of interest.

IRB approval None.

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